Amendments to the Specification

Between the title and first paragraph on page 1, please *insert* the following heading:

BACKGROUND INFORMATION

Please replace the paragraph that bridges pp. 1 and 2 with the following amended paragraph:

US 4,560,595 discloses a sheet form camouflage material designed to have thermal emission characteristics which match closely the known thermal emission characteristics of the natural environment in which the camouflage material is intended to be used. The sheet can protect objects against detection in the thermal ~~infra-red~~ infrared (IR) wavelength range, and is also adapted to provide camouflage in the ~~ultra-violet~~ ultraviolet (UV), visible and photographic ~~infra-red~~ IR wavelengths. The camouflage material may be attached to a supporting web by means of an adhesive or by mechanical means such as clamps or sewing.

Please replace the 3rd and 4th full paragraphs on p. 3 with the following amended paragraphs:

Visible wavelengths can be used~~, both~~ by land-based surveillance systems or individuals[[,]] and by satellites to detect the presence of objects. Obviously, the position of an object in relation to its surroundings ~~will~~ dictates the type of camouflage cover required to protect against visual detection. The earlier examples of desert and jungle situations would require, respectively, sand-colored ~~sand-coloured~~ and patterned green coverings ~~respectively~~. It is often desirable that the ~~colour~~ color of a surface be changed rapidly ~~in order~~ for a camouflage system to adapt to new surroundings.

Similarly, the surface texture of an object can lend the object to being easy or difficult to detect in visible wavelengths. Surface profiling can be used to protect objects against detection by aerial imaging. If a surface of an object is uneven[[,]] ~~then~~ light scatters differently from different parts ~~of it~~, thus breaking up the lines of the object and rendering it difficult to detect. Shadows created by an object can also be ~~minimised~~ minimized by suitable use of uneven surface profiles.

Please replace the 2nd paragraph on p. 4 with the following amended paragraph:

In an analogous manner, infra-red signatures of objects can make them easy to detect. IR pigments can be used to give an object apparently similar IR properties to the surroundings. A suitable pigment for adapting IR characteristics is carbon black dust. This is suitable for adapting near-IR characteristics. Alternatively, or in addition, highly reflective metallic layers, with energy reflection values of around 78% or higher, can be incorporated beneath a film made from an optically ~~coloured~~ colored but IR transmissive polymer ~~film~~ (e.g. polyethylene). These ~~could suitably~~ can be ~~metallised~~ metallized

polyester, ~~metallised polyvinylfluoride or metallised~~ metallized polyvinyl fluoride or metallized PTFE. Such layers have [[a]] low emissivity, typically 0.2 or even 0.1 or lower (where 1.0 is totally non-emissive and 0.0 is totally reflective), and can be used to control thermal or far-IR characteristics of a surface. Alternatively, metal flakes such as ~~aluminium~~ aluminum or brass flakes can be added within or on the surface of a base substrate.

Please replace full paragraphs 1-3 on p. 5 with the following amended paragraphs:

IR/Thermal imaging can be used to detect objects via ~~the~~ heat which they produce. ~~Metallised~~ Metallized particles or ~~metallised fibres~~ metallized fibers (scrim) incorporated into a material, or a ~~metallised~~ metallized film, can be used to reflect heat produced in ~~the~~ an object back toward ~~the~~ its source so that the external surface of the object cannot be seen to be producing a great deal of heat. ~~An example of a~~ A situation in which this effect might be useful is in protecting a ~~stationary or moving~~ vehicle from detection while ~~the~~ its engine ~~of the vehicle~~ is producing a large amount of heat.

In addition, or alternatively, phase change materials can be used to absorb heat from hot spots of objects. For instance, a phase change material which operates at a high temperature could be used to smooth out the heat signature of a boiler housing. The function of phase change materials is described in detail in ~~our co-pending~~ application no. GB 0207642.0 (published as WO 2003/091652).

Radar is also used in surveillance systems to detect objects. To avoid detection by this method, RADAR absorbing materials (RAMs) can be used in camouflage coverings. RAMs are discussed in ~~US patent numbers~~ U.S. Pat. Nos. 5,523,757 and 4,479,994. Suitable materials for RADAR attenuation include carbon (which may suitably be in the form of carbon ~~fibres~~ fibers) and ~~aluminium-coated~~ aluminum-coated glass particles. Such particles are particularly suitable for 35 GHz and 94 GHz RADAR bands.

Between the 2nd and 3rd paragraphs on page 6, please *insert* the following heading:

SUMMARY OF THE INVENTION

Please replace the second paragraph on page 7 with the following amended paragraph:

Suitably the covering could have a second sheet similar to the first sheet. The second sheet ~~suitably could~~ can be adhered to the first sheet, preferably to a non-adhesive major surface of the first sheet, in such a way that it can be removed ~~from a first sheet~~, preferably without damage to either sheet. ~~The feature of providing~~ Providing one or more sheets which can be removed ~~from the remaining sheets could conceivably~~ can be useful ~~in situations~~ where it is required to alter the visual appearance of a covering while

leaving the other camouflage functions of the covering unchanged. For example, a ~~sand-coloured~~ sand-colored upper sheet could be removed from a covering at a time when the covering is no longer to be used in a desert situation but is instead to be used in an area with large amounts of vegetation. ~~It would be unnecessary to remove~~ Removing the entire covering, which may still be in good condition after extended use, is unnecessary. ~~In accordance with the present invention, the~~ The upper sheet could simply be peeled off to reveal a lower sheet. The lower sheet may suit the new environment, or a further sheet could be adhered to it to suit the environment.

Please replace the 2nd and 3rd full paragraphs on p. 8 with the following amended paragraphs:

The first and/or second sheets could be of a polymer material such as PVC, PVF, polypropylene, polyethylene, silicones, ~~polysulphones~~ polysulfones or polyesters.

Suitably, the covering could comprise pigments that reflect or absorb ultra-violet and/or infra-red. It ~~could suitably~~ can comprise ~~metallised~~ metallized scrim, and the scrim threads can be ~~metallised~~ metallized with ~~aluminium~~ aluminum, nickel, chrome or copper.

Please replace the paragraph that bridges pp. 8-9 with the following amended paragraph:

The covering ~~could suitably~~ can comprise one or more radio absorbing material such as carbonyl iron, Kevlar, ferrites, or carbon loaded foams. Suitable classes of RAMs include Salisbury screens, Jaumann absorbers, circuit ~~analogue~~ analog absorbers, magnetic RAM and Hybrid RAM systems. The covering ~~could suitably~~ can comprise a flexible soft-magnetic thin film. ~~This film would~~ which can act as both RADAR absorber and ~~Infrared~~ IR reflector. Suitable examples of magnetic films include alloys of cobalt/iron/silicon/molybdenum/boron and cobalt/zirconium/niobium. One component of the covering ~~could suitably~~ can comprise a phase change material, such as hydrated ~~aluminium~~ aluminum chloride, hydrated magnesium chloride, or Glauber's salt.

Before the last paragraph on page 9, please *insert* the following heading:

BRIEF DESCRIPTION OF THE DRAWINGS

Before the fifth (first non-indented) paragraph on page 10, please insert the following heading:

DETAILED DESCRIPTION

Please replace the 1st and 2nd paragraphs on page 11 with the following amended paragraphs:

In one embodiment, a carrier mixture of acrylic resin and vinyl chloride or vinyl acetate co-polymer is dissolved in a blend of ketone solvents (MIBK/MEK) (methyl iso-butyl ketone/methyl ethyl ketone) and is made UV stable by ~~the~~ addition of a UV absorber

component. Alternatively, a water-based carrier could be used. A range of organic and/or inorganic pigments may be added to the base carrier to achieve a wide and selective range of different visual ~~colours~~ colors and opacities.

Where a polymeric base material is used, it is preferably in calendered film format and can be engineered to exhibit specific ~~colour~~ color and near ~~infra-red~~ IR spectral properties by ~~the~~ addition of a selected mixture of organic and inorganic pigments which give both the desired visual characteristics and near-IR reflection characteristics which match chlorophyll's spectral characteristics. Such a combination of pigments can be incorporated so as to create a ~~coloured~~ colored material matched to the ~~colour~~ color and the IR characteristics of chlorophyll. A ~~colour~~ color having the spectral characteristics of chlorophyll in visible wavelengths is so-called "NATO green". This is a visual ~~colour~~ color defined by British Standard BS381C:1996. Inks or base films can be produced in any color. Carbon could also be added to the base film to give radar absorbing properties. In one example, a white base film ~~could be produced~~ having near-IR characteristics matching those of chlorophyll can be produced. If desired, such a base film can then be printed with other ~~colours~~ colors, for example to simulate vegetation.

Please replace the partial paragraph at the top of p. 12 with the following amended portion:

absorb NIRR. A surface of the base film can then be printed over to achieve desired ~~colour~~ color effects. For example, a digital printing method can be used, whereby ~~colour~~ color pigments contained in a solvent are non-contact-printed onto a surface of the film ~~in order~~ to create a digitally-defined pattern. Typically, microscopic dots of three primary ~~colours,~~ colors (cyan, magenta and yellow)[[,]] and additionally black[[,]] are laid down ~~colour-by-colour~~ color-by-color. The solvent is then evaporated to leave the ~~colour~~ color pigments on the surface of the film, and the human eye integrates the ~~coloured~~ colored dots to give the desired pattern.

Please replace the first full paragraph on p. 12 with the following amended paragraph:

Titanium dioxide pigments can be added to counteract the ~~greying~~ graying effect caused by carbon pigments in the film. It can therefore be desirable to modify the pattern of ~~colour~~ color to be printed onto the film to compensate for the ~~colour~~ color of the base film. Similarly, if ~~colour~~ color pigments are used within the base film, the ~~colours~~ colors to be printed can be adjusted accordingly to give a desired pattern.

Please replace the partial paragraph at the top of p. 13 with the following amended portion:

desirable to modify the NIRR characteristics of the underlying film, the solvent-based pigment inks described above ~~could suitably~~ can be used, as these tend to be absorptive to NIRR. The ~~colours~~ colors of the inks can also be selected to match the visible character-

istics of the covering to its surroundings. Selected inks could be applied across the entire surface of a base film, or alternatively they could be applied only to certain areas of the film where it is desired to modify the NIRR or ~~colour~~ color characteristics of the base film.

Please replace the paragraph that bridges pp. 13-14 with the following amended paragraph:

A camouflage covering suitable for concealing structures and objects in jungle-type environments can be constructed ~~according to an embodiment of the present invention~~ as follows. Referring to ~~figure~~ Figure 2, a base material 21 comprises pigments exhibiting the characteristics of chlorophyll. In a preferred embodiment, the ~~colour~~ color of this material is NATO green. ~~The base material should be~~ Base material 21 preferably is relatively strong and hardwearing and ~~could suitably~~ can comprise a polymer such as PVC or extruded thermoplastic polyolefin (TPO). Optionally, ~~the~~ base material 21 could be attached, for example using an adhesive, to a fabric layer (scrim) to provide increased strength and durability. A camouflage covering consisting solely of base 21 would produce a uniform reflectance spectrum across its surface. However, jungle-type scenes are unlikely to be uniform[[,]] but rather ~~will~~ have a mottled effect, for example as produced by leaves on trees. This mottled ~~effect,~~ or variegated effect[[,]] is created by spots or blotches of different ~~colours,~~ colors and may exist in near-IR as well as in visible wavelengths. ~~It is desirable to simulate~~ Simulating this effect so that structures can be better camouflaged. ~~In embodiments of the present invention this may~~ is desirable and can be achieved by incorporating a mix of organic and inorganic pigments within ~~the~~ base 21 and/or by printing over ~~the~~ NATO green layer 21 with a series of inks 23 having varying spectral characteristics. The inks 23 are preferably of ~~colours~~ colors such as yellow, brown, green and black such that a combination ~~of these colours~~ would be difficult to detect among vegetation. The inks 23 may be transparent, semi-transparent or opaque to near-IR wavelengths. Preferably, some of the inks will be visually opaque. As a result ~~of this~~, when a combination of the inks is applied in a pattern over ~~the~~ NATO green base layer 21, a differential (mottled) effect will be produced which is effective in both visible and near-IR wavelengths.

Please replace the 1st and 2nd full paragraphs on p. 14 with the following amended paragraphs:

Suitable inks ~~for use in accordance with the present invention~~ include the following phthalocyanine inks produced by AKZO Nobel Inks: Phthalocyanine Blue and Cu-Phthalocyanine Green. Ink pigments can be added into these carriers to produce desired ~~colours~~ colors. In this way, a wide range of ~~colours~~ colors may be produced.

A wash layer 22 can optionally be applied across ~~the~~ NATO green layer 21. This wash layer of a specific ink formulation can be applied to the base material to adjust the overall reflectivity of the camouflage covering. This could be a 100% near-IR transmissive ink which has a ~~specific~~ visual ~~colour~~ color reflection~~. This would then~~ that can alter the perceived visual ~~colour~~ color but retain the near-IR red reflection characteristics of the original base layer.

Please replace the paragraph that bridges pp. 15-16 with the following amended paragraph:

On the ~~opposite~~ surface of ~~the~~ base material 21 opposite the ~~colour-printed~~ color-printed surface, an ~~aluminium~~ aluminum ink could be applied~~. Such an ink provides~~ so as to provide IR ~~reflectiveness~~ reflectivity. The ink could be printed onto the base material using a gravure contact print technique[[,]] in either a single-pass or a multi-pass operation. Using a multi-pass technique provides for a more even distribution of the ink on the surface and a higher level of cover. Speeds of up to 50 ~~metres per minute~~ m/min can be achieved using gravure printing.

Please replace the first full paragraph on p. 16 with the following amended paragraph:

A suitable ink could comprise ~~aluminium~~ aluminum flake pigments suspended in an acrylic resin and solvent mix consisting of ketones such as MEK or MIBK. The relative proportions of these substances ~~could suitably~~ can be 20% ~~aluminium~~ aluminum flake, 10% acrylic resin and 70% ketone solvents. Once printed onto a surface, the solvent base of the ink is evaporated off using non-contact hot air ovens. A scrim reinforcement layer ~~could suitably~~ can be applied to the ~~aluminium-coated~~ aluminum-coated rear surface of the covering.